

Amendments to the Drawing:

Replacement sheets have been provided for the drawing sheets in the application. Descriptions of the changes to the Figures are provided below.

To clarify that two separate water separators are shown in the drawing, the reference numeral for the water separator in Figure 1 has been changed from “6” to “6b”; and the reference numeral for the water separator shown in Figure 2 has been changed from “6” to “6a”.

The lead lines for cooling devices 5a and 5b have been changed for the sake of clarity.

Arrows have been introduced into Figures 1 and 2 to show the direction of gas flow.

Hatching has been provided in Figures 4 and 5 to better illustrate the nozzles.

REMARKS

Applicants respectfully request consideration and allowance of the outstanding rejection. Claims 1, 3, and 6-10 are currently amended, claim 2 has been canceled without prejudice, claims 4-5 and 11 are previously presented, and new claim 12 has been added. Thus, claims 1 and 3-12 are pending in the instant application.

Changes to the Specification:

Paragraph [0023] has been amended to clarify the description of the subject matter of Figure 3. Paragraphs [0027] and [0028] have been amended to conform to the changes made to the drawings. No new matter has been entered by the changes to the specification.

Changes to the Claims:

Claims 1, and 6-10 have been amended to more clearly define the scope of the claimed invention. New claim 12 has been added. The claim amendments and new claims are fully supported by the application as filed. No new matter has been added by the claim amendments.

Arrangement of the Specification:

The Office Action objects to the arrangement of the specification. It is apparent that only the translation document was considered in connection with the instant Office Action. Applicants' representative called the Examiner on March 12, 2008 to inform him that a substitute specification was filed in this application on May 12, 2005. Accordingly, Applicants respectfully request that the Examiner review the substitute specification. If it is believed that any informalities are present in the substitute specification, Applicants request that Examiner identify any such informalities in the next Office Action in this application.

Objections to the Drawing:

The drawings are objected to under 37 C.F.R. § 1.83(a). Applicants have amended the drawings to identify two separate water separators in Figures 1 and 2, labeled 6b and 6a, respectively. No new matter has been added by the amendments to the drawing.

Rejection under 35 U.S.C. § 112, Second Paragraph:

Claims 1-5 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for reciting the term “operating state” without providing antecedent basis therefor. This term has been deleted from claim 1 in this amendment. Accordingly, the outstanding rejection is believed to be moot. Thus, reconsideration is respectfully requested.

Rejection Under 35 U.S.C. § 103:

Claims 1-11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bird (U.S. Patent No. 4,080,103, hereafter Bird), in view of Thompson (U.S. Patent No. 3,301,255, hereafter Thompson), Richardson (U.S. Patent No. 5,752,506, hereafter Richardson), and Garoutte (U.S. Patent No. 5,222,489). For the sake of convenience, the references other than Bird are referred to collectively herein as the “secondary references.” Applicant respectfully traverses the outstanding rejection. Applicants respectfully contend that (a) the combination of applied references does not disclose all the limitations of independent claims 1 and 6, and (b) there is no motivation to combine Bird with the secondary references.

The Prior Art Does Not Teach All the Limitations of Applicants’ Claims:

Claim 1 recites the limitation “the tube contains a tapering passage after which a first water separator is directly connected”. Claim 6 recites similar limitations. The prior art does not disclose these features. The Examiner admits that the primary reference, Bird, does not disclose the tapered passage recited in claims 1 and 6. Applicants respectfully add that none of the applied references disclose the feature of a first water separator being directly connected to the tube after the tapering passage, as recited in claim 1. The applied references also do not disclose the feature of “precipitating and separating off water from the gas cooled in the tapering passage by means of a first water separator”, as recited in claim 6. The above is emphasized since even when the features of Bird are combined with those of the three other references as proposed in the Office Action, the proposed combination still does not meet the limitations of claims 1 and 6. Applicants elaborate below.

The Examiner contends that tapered tubes and nozzles are well known and take various forms. (OA, Page 4, last paragraph). The Examiner cites to Figure 5 of Thompson, to element 20 of Richardson, and to Figure 3 of Garoutte as independent examples of disclosures of tapered tubes. (OA, page 4, last paragraph). However, none of the three listed secondary references discloses the feature of a water separator being connected after the tapering passage of claim 1 or the feature of separating off water from the gas cooled in the tapering passage in a first water separator of claim 6. Accordingly, even if the references were combined as proposed in the Office Action, the combination would still not meet the limitations of Applicants' claims. Where the prior art does not teach all the elements, the obviousness rejection fails, independently of whether or not there is motivation to combine or modify the references. *MuniAuction, Inc. v. Thompson Corp.*, 502 F.Supp.2d 477, 491 (W.D. Pa. 2007). Thus, based on the foregoing, claims 1 and 6 are patentable over the prior art under 35 U.S.C. § 103 (a). Nevertheless, below, Applicants address the alleged motivation to combine the references.

There is No Motivation to Combine the References:

Applicants further contend there is no motivation to combine or modify the references as proposed in the Office Action. The Examiner does not clearly identify in the Office Action which references should be combined to meet the various claim limitations. Indeed, at the bottom of page 4 of the Office Action, the Examiner appears to use the secondary references in the alternative as possible sources for modifying Bird to include a tapered tube. Moreover, Applicants note that combining more than one secondary reference with Bird would create redundancy. Accordingly, the following considers combinations of Bird with each of the secondary references separately.

The Examiner proposes importing into Bird a tapered tube from Figure 5 of Thompson, which is believed to refer to mouthpiece 29, shown at the right of Figure 5. The Examiner similarly proposes importing element 20 from Richardson (last line, page 4 of OA) into Bird to provide a tapered tube. The Examiner's stated motivation for the proposed modifications of Bird is to "achieve air flow characteristics such as pressure and volumetric flow rate." (See OA, page 5, first paragraph). Applicants respectfully contend that the above does not qualify as motivation to modify Bird, since no desirable outcome is even alleged to result from modifying the

pressures and/or volumetric flow rates of Bird, or what the modified values of these respective quantities would be upon implementing the proposed combination.

Applicants note that claims 1 and 6 both recite that the tapered passage is operable to cool the compressed gas passing therethrough. On this point, Applicants contend that there is no motivation to import features from Thompson or Richardson into Bird for this purpose since Bird discloses the use of a cooling coil for this purpose. Since the need for cooling is met by other means in Bird, there is no motivation to import the teachings of either Thompson or Richardson into Bird to provide this feature.

Moreover, Richardson specifically teaches away from the proposed combination. Claim 6 recites “separating off water from the gas cooled in the tapering passage”. Claim 1 recites that gas is cooled in a tapering passage and that a water separator is connected to the tube after the tapering passage. In stark contrast, with reference to Figure 1, Richardson discloses that its gas mixture is *humidified* prior to being directed through a tapered section and on to endotracheal tube 4. (See Richardson, col. 5, lines 49-62). It would be illogical to humidify the gas at block 48 in Figure 1 of Richardson and to shortly thereafter “separate” water from the gas, thus *dehumidifying* the gas, at element 20, which is located downstream from block 48 along the direction of gas flow. Accordingly, Richardson specifically teaches away from using element 20 to cool and to remove water from the flowing gas. Accordingly, one of skill in the art would not look to Richardson cool and dehumidify the gas flow of Bird.

Directing attention to the last reference, the Examiner proposes importing the features of Figure 3 of Garoutte into Bird. In this case, in addition to asserting a lack of motivation to combine Garoutte with Bird, Applicants contend that the proposed combination fails to meet at least two limitations of claims 1 and 6.

Above, Applicants explained why the motivation to modify Bird provided in the Office Action was too vague to serve as actual motivation to combine the references. Specifically, merely stating in the Office Action certain pressures and/or volumetric flow rates could be “achieved” by modifying Bird does not constitute motivation to modify Bird, absent some statement of a benefit in doing so.

Separately, Garoutte does not disclose the features of claims 1 and 6 as alleged in the Office Action. Claim 1 recites the feature “the tapering passage having a cooling effect on the

compressed gas". Claim 6 recites a similar feature. Figure 3 of Garoutte discloses a vortex tube cooler that separates gas into hot and cold streams according to a known process. However, the gas is not cooled by passing the gas through a tapering passage. Rather, a warmer portion of the gas flow is directed toward the outer diameter of tube 32, by the vortex action, and is allowed to escape tube 32 at the right end 54, and cooler gas is redirected back leftward through tube 32 and leaves tube 32 via left end 52. Thus, it is the well known vortex effect that cools the gas, not the passage of the gas through a tapered passage. Indeed, in accordance with the operation of the vortex tube cooler, the leftward directed gas that ends up leaving tube 32 via left end 52 is cooled *before* reaching the widening section of left end 52.

Moreover, the tapered passage at the left end 52 of tube 32 expands in diameter in the direction of gas flow, which basic principles indicate would tend to warm and not cool the gas flowing therethrough. Thus, Applicants respectfully contend that Garoutte does not disclose the feature of "the tapering passage having a cooling effect on the compressed gas" of claim 1 or the related feature of claim 6.

Separately, the combination of Bird and Garoutte also fails to disclose the limitation of having a water separator connected to a tube after a tapering passage of claim 1, or the related limitation of claim 6. Thus, even when combined, the proffered combination of Bird and Garoutte stills fails to meet the limitations of claims 1 and 6.

Based on the foregoing, claims 1 and 6 are patentable over the prior art under 35 U.S.C. § 103 (a). Claims 3-5 and 10-11 depend from claim 1, claims 7-9 depend from claim 6, and the dependent claims inherit all the limitations of their respective independent claims. Moreover, the dependent claims recite further novel, nonobvious limitations not disclosed in the prior art. Accordingly, claims 1 and 3-11 are patentable over the prior art under 35 U.S.C. § 103 (a).

New claim 12 depends from claim 1 and is patentable over the prior art for the same reasons as claim 1.

Conclusion:

In view of the foregoing, Applicants respectfully submit that the instant application is in condition for allowance. Early and favorable action is earnestly solicited. In the event there are any fees due and owing in connection with this matter, please charge same to our Deposit Account No. 11-0223.

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Respectfully submitted,

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